

# Notice of Allowability

Application No.

10/539,310

Examiner

Charles G. Freay

Applicant(s)

KWON ET AL.

Art Unit

3746

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment of December 20, 2007.
2. ☒ The allowed claim(s) is/are 1-7 and 9-16.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 9/2007
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 20080310 .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jun Ha (Reg. No. 58,508) on March 10, 2008.

The application has been amended as follows:

Claim 1 has been rewritten as follows:

--1. (Twice Amended) A refrigerating system comprising:  
an evaporator for performing a cooling operation as a refrigerant is evaporated;  
a reciprocating compressor which includes a driving unit having a stator including an outer stator fixed inside a hermetic container, an inner stator disposed with a certain air gap with an inner circumferential surface of the outer stator, and a winding coil wound at one of the outer stator and the inner stator, to which power is applied from an external source, a mover including magnets disposed at regular intervals between the outer stator and the inner stator and linearly and reciprocally moved when power is applied to the winding coil and a magnet frame, in which the magnets are mounted, for transmitting a linear reciprocal motional force to a compression unit, a compression unit for performing a compressing operation on a refrigerant upon receiving the linear

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reciprocal motional force of the driving unit, and a lubrication unit for performing a lubricating operation;

a condenser for changing the refrigerant compressed in the reciprocating compressor to a liquid refrigerant;

a capillary tube for decompressing the refrigerant discharged from the condenser and transmitting it to the evaporator;

an organic compound refrigerant sucked into the evaporator and comprising carbon and hydrogen, a sort of natural refrigerant, and having combustibility and explosiveness; and

a mineral-based lubricant stored inside a hermetic container of the reciprocating compressor and performing a lubricating operation on each sliding part and supplied by the lubrication unit to each motional portion of the driving unit and the compression unit,

wherein the mineral-based lubricant has a density of  $0.866 \sim 0.880 \text{ g/cm}^3$  ~~and a~~ flash point of above  $140^\circ\text{C}$  and a kinematic viscosity of  $7.2 \sim 21.8 \text{ mm}^2/\text{s}$  at a temperature of  $40^\circ\text{C}$  such that the mineral-based lubricant mixes with the organic compound refrigerant to perform the lubricating operation.--

Claim 9 has been amended as follows:

--9. (amended) The refrigerating system of claim 1, wherein the lubricant has a kinematic viscosity of  $7.7 \sim 21.8 \text{ mm}^2/\text{s}$  ~~at a temperature of  $40^\circ\text{C}$~~  and a viscosity index of  $73 \sim 99$ .--

Claim 12 has been amended as follows:

--12. (Amended) A refrigerating system comprising:

an evaporator for performing a cooling operation as a refrigerant is evaporated;

a reciprocating compressor which includes a driving unit having a stator

including an outer stator fixed inside a hermetic container, an inner stator disposed with a certain air gap with an inner circumferential surface of the outer stator, and a winding coil wound at one of the outer stator and the inner stator, to which power is applied from an external source, a mover including magnets disposed at regular intervals between the outer stator and the inner stator and linearly and reciprocally moved when power is applied to the winding coil and a magnet frame, in which the magnets are mounted, for transmitting a linear reciprocal motional force to a compression unit, a compression unit for performing a compressing operation on a refrigerant upon receiving the linear reciprocal motional force of the driving unit, and a lubrication unit for performing a lubricating operation;

a condenser for changing the refrigerant compressed in the reciprocating compressor to a liquid refrigerant;

a capillary tube for decompressing the refrigerant discharged from the condenser and transmitting it to the evaporator;

an organic compound refrigerant sucked into the evaporator and comprising carbon and hydrogen, a sort of natural refrigerant, and having combustibility and explosiveness; and

a mineral-based lubricant stored inside a hermetic container of the reciprocating compressor and performing a lubricating operation on each sliding part and supplied by the lubrication unit to each motional portion of the driving unit and the compression unit, wherein the lubricant has a kinematic viscosity of  $7.2 \sim 21.8 \text{ mm}^2/\text{s}$  at a temperature of  $40^\circ\text{C}$ , ~~and~~ a viscosity index of  $73 \sim 99$  and a density of  $0.866 \sim 0.880 \text{ g/cm}^3$  such that the mineral-based lubricant mixes with the organic compound refrigerant to perform the lubricating operation.--

Claim 14 has been rewritten as follows:

--14.(Amended) The refrigerating system of claim 12 wherein the lubricant has a ~~density of  $0.866 \sim 0.880 \text{ g/cm}^3$  and~~ a flash point of above  $140^\circ\text{C}$ .--

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G. Freay whose telephone number is 571-272-4827. The examiner can normally be reached on Monday through Friday 8:30 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Charles G Freay/  
Primary Examiner  
Art Unit 3746

CGF  
March 11, 2008